I have only to add that the final remark of Mr. Newman quoted above is a fallacy. The term radius has not the priority over that of nervures, or veins, for the organs in question. Jurine, who first proposed the term radius, employed that of nervures for the organs in question. "Ayant étudié les ailes des hyménoptères et des diptères, j'ai remarqué que leurs nervures formaient un réseau cellulaire, &c." (N. Méth. class Hym., p. 2); and after describing the two strong parallel *nervures* at the anterior margin of the wing, he says, "Ces deux nervures n'ayant pas encore reçu de nom, j'ai jugé qu'il était nécessaire de leur en donner un :—en conséquence j'ai donné celui de radius à la nervure externe et celui de cubitus à l'interne" (*Ibid.* p. 3).

P.S. Since these notes were written a remarkable memoir by A. H. Haliday, Esq., on the same subject, and in which the vein theory is also maintained, has appeared in the Dublin Natural History Review.

VIII. *A Revision of the British* Atomariæ; *with Observations on the Genus.* *By* T. Vernon Wollaston, Esq. M.A., F.L.S.

[Read 5th January, 1857.]

Having paid some little attention, during the last few years, to our native *Atomariæ*, I propose, in the following paper, to lay before the Society an enumeration of the species which have been hitherto ascertained to inhabit the British Isles. The confusion which has unfortunately arisen through the inaccurate identifications of the late Mr. Stephens, whose collection (now in the British Museum) must moreover be regarded as the sole interpreter of his very meagre and unsatisfactory diagnoses, has rendered the task a somewhat tedious one; nevertheless, a careful collation of his entire series (amounting, however, to only 111 specimens in all), in conjunction with the assistance which I have derived from the material which various friends (amongst whom Messrs. Waterhouse, Janson, Douglas, Murray and Morris Young, should be particularly mentioned) have placed in my

hands, has enabled me, I trust, to form a tolerably correct estimate as to the actual species which our fauna includes. The examination of 1,137 British specimens from various parts of the country (661 of which were collected by myself, and 247 by Mr. Waterhouse), has given me a very fair insight into the about of aberration, from local disturbing causes, to which the several representatives are subject; and if, in addition to this, I include the eighty-seven Continental types with which my cabinet is supplied, the specimens which have passed under my own immediate observation, whilst compiling the present memoir, is no less than 1,224.

With respect to the affinities of the genus, I will merely remark, that whilst at one of its extremities it is intimately related to the *Cryptophagi*, it merges at the other, still more decidedly, into *Ephistemus*. So nearly akin is it indeed to the latter, that, after a careful dissection, I can perceive no structural differences (of any constancy) between the two, except that the *Atomariæ* have a minute tooth immediately within the apex of their mandibles, and have the joints of their funiculus (though this is not always very perceptible) alternately long and short; whilst even the normal *facies* of the groups, which (from the small size, subglobose bodies, and shorter limbs of the *Ephistemi*) might seem at first to be remarkably dissimilar, is in reality so lost sight of in the less typical forms, that at times it is not easy to pronounce, without a close examination, to which of them certain species appertain. This is eminently the case with an *Atomaria* peculiar to Madeira, and which is so shortened and rounded in its outline that I had regarded it, in my "Insecta Maderensia," as an *Ephistemus;* though, not having had occasion, whilst compiling that volume, to dissect the immediately allied groups, I had formed it into a distinct section of the genus, characterized by the very peculiarities (of antennæ and mandibles) which constitute the almost sole *permanent* feature of the *Atomariæ*.

I would call particular attention to the fact, of what the respective insects are to which the *Atomariæ* approximate, at either extremity of the genus, because upon it depends the collocation of the several species *inter se;* and because I believe that this circumstance, if duly considered, is more likely to point out a natural arrangement of them than any one character can possibly do, which may chance to be selected, for the purpose of reducing them into sections. It is on this account that I have rejected the greater or less approximation of the antennæ, which Erichson has made use of, in classifying them,—believing that if it were strictly

adhered to, species which are intimately related would be placed asunder; though more especially from the conviction that the relative distance between the antennæ and eyes is a character of such doubtful importance in the *Atomariæ*, and moreover so difficult of observation (except in a very few and well-marked cases) in objects thus small, as to be practically worthless. If, however, we bear in mind the close affinity of certain members to the *Cryptophagi*, and of others to the *Ephistemi*, we shall at once acknowledge the propriety of commencing the genus with such an insect as the *A. ferruginea* (which, in general aspect and habit, is almost a *Cryptophagus* in miniature), and of ending it with the *Ephistemus*-like *versicolor:* and so, having once settled our extremes, it becomes a comparatively easy task to fill in the means.

With these few remarks, I will proceed to the consideration of the species themselves,—merely observing that the three loose and general divisions into which I have distributed them are more likely, I think, to be found in accordance with Nature, and therefore to be easily understood, than if they had depended on one or two minute characters, of which a slightly greater or less antennal approximation (often difficult to appreciate even beneath the microscope) formed the main element.

S. I. *Body with sides more or less parallel; prothorax behind usually truncated and more or less distinctly margined.*

Sp. 1. *Atomaria ferruginea.*

Cryptophagus ferrugineus, Sahl., Ins. Fenn. i. p. 58.
Atomaria pallida, Woll., Ann. and Mag. of Nat. Hist. xviii. p. 452, pl. 9, fig. 1 (1847).
——— *ferruginea*, Erich., Nat. der Ins. Deuts. iii. p. 377 (1848).

At once known by its uniform testaceous hue; subdepressed, pubescent surface; and by the ninth joint of its (rather long and robust) antennæ being so far reduced in dimensions as to cause the club to appear scarcely more than biarticulate. Its prothorax is less truncated behind than is the case with the other members of this division of the genus,—being somewhat posteriorly-produced in front of the scutellum. It is apparently extremely rare, the only British examples which I have seen, except the four which I myself possess, being in the collection of the Rev. Hamlet Clark. His specimens, together with three of my own, were captured at Fulbourn, near Cambridge, in 1847; and one I took

subsequently in Gloucestershire,—at Withington, on the Cotswold Hills, in 1852. It is unrepresented in the Stephensian cabinet.

Sp. 2. *Atomaria fimetarii.*

Kateretes fimetarii, Hbst, Käf. v. p. 14, Tab. 45, fig. 4 (1793).
Dermestes fimetarius, Fab., Syst. Eleu. i. p. 316 (1801).
Atomaria fimetarii, Erich., Nat. der Ins. Deuts. iii. p. 377 (1848).

This species may be recognized by its large size (it being the longest of the British *Atomariæ*, though not so large in general bulk as the *A. Hislopi*) and subcylindrical form, by its densely (though not very deeply) punctured surface, by its ample and convex prothorax, and by its basally much approximated antennæ. Like the last species, it is apparently extremely rare, and unrepresented in the Stephensian cabinet,—the only specimen which has come under my observation having been captured by myself at Danes Dyke, near Flamborough, in Yorkshire, during July, 1853. I possess examples, taken at Stettin and sent to me by Herr Kraetz, which differ in no respect from the English one.

Sp. 3. *Atomaria linearis.*

Atomaria linearis, Steph., Ill. Brit. Ent. iii. p. 70 (1830).
——— *nigriventris* (p.), Steph., Ill. Brit. Ent. iii. p. 69 (1830).
——— *linearis*, Erich., Nat. der Ins. Deuts. iii. p. 384 (1848).

The exceedingly narrow, parallel, and subdepressed form of this species, in conjunction with the extreme delicacy of the posterior margin of its (subquadrate) prothorax, will at once distinguish it from the remainder of the genus. It is generally distributed throughout England, though not usually very abundant anywhere. I have taken it at Cransley, in Northamptonshire; at Gravesend and Plumpstead, in Kent; at Bletchingley, in Surrey; and at Farmington (on the Cotswold Hills), in Gloucestershire; and it has been captured by Mr. Waterhouse at Gosport, Erith and Highgate, and by Mr. Bates at Leicester. Mr. Haliday also reports its occurrence in Ireland. There are ten specimens under the name of *linearis* in the Stephensian cabinet, nine only of which however are the true species,—one of them being the *A. nigriventris*.

Sp. 4. *Atomaria elongatula.*

Atomaria nigriventris (p.), Steph., Ill. Brit. Ent. iii. p. 69 (1830).
——— *elongatula*, Erich., Nat. der Ins. Deuts. iii. p. 383 (1848).

Allied to the *A. fimetarii*, from which, however, it may be readily distinguished by its rather smaller size and more elongated, sub-

depressed form, by its darker and browner hue, and by its much less developed prothorax,—which is narrower than the elytra. It is rather a scarce insect, though widely distributed throughout the country. I have taken it at Whittlesea Mere; at Spridlington, near Lincoln; at Bridlington, on the Yorkshire coast; at Cransley, in Northamptonshire; at Basset Down and Avebury, in Wilts; at Farmington, in Gloucestershire; at Treneglos, in Cornwall; and in the county of Cork (near Kanturk), in Ireland. And it has been captured by Mr. Morris Young, in Renfrewshire.

Amongst the seven specimens which are labelled "*nigriventris*" in the Stephensian cabinet, there is a single *elongatula*. As five, however, out of the remaining six are unquestionably the examples which Mr. Stephens described from (as, indeed, is proved by the labels which are attached to two of them), and are identical with the (subsequently established) *A. nana* of Erichson, it is clear that the title of *nigriventris* will have to be conceded to that species, and cannot, therefore (although of prior date to *elongatula*), affect the present insect.

Sp. 5. *Atomaria umbrina*.

Cryptophagus umbrinus, Gyll. Ins. Suec. iv. p. 291 (1827).
Atomaria nigrirostris (p.), Steph., Ill. Brit. Ent. iii. p. 69 (1830).
——— *umbrina*, Erich., Nat. der Ins. Deuts. iii. p. 380 (1848).

Approaches very closely to the *A. nigriventris*, but it may be known by its usually slightly larger size, by its somewhat less shining, and just perceptibly flatter and less deeply punctured surface, and by the structure of its prothorax,—which is transversely impressed in the centre of its hinder region, with indications of a short costa, or raised line (often very obscure), on either side of the depression, and with its sides and posterior angles more evidently margined. I have received specimens from Mäerkel's collection, as also from Paris, which agree perfectly with the English ones. It is by no means a common insect in this country. I have, however, captured it at Mablethorpe, on the Lincolnshire coast; at Cransley, in Northamptonshire; at Shenton, and in the Ambion wood, near Market Bosworth, in Leicestershire; at Holm Bush, near Brighton; and at Withington, in Gloucestershire: and it has been taken by Mr. Waterhouse at the Crystal Palace, Sydenham. Mr. Murray also has found it near Edinburgh, and Mr. Haliday in Ireland.

The *A. nigrirostris* of the Stephensian collection is composed of four specimens of the *A. umbrina*, Gyll, and five of the *A. nana*,

Erich.: but as no one of them has Mr. Stephens's "typical label" attached to it, it is impossible to decide which of the two species his diagnosis (which agrees with neither) was intended to represent. As Gyllenhal's *Cryptophagus umbrinus*, however, was published three years before Mr. Stephens's *A. nigrirostris*, it is certain that the latter title (even if applied by the author to Gyllenhal's insect) cannot in any way interfere with the former.

S. II. *Body more or less oblong; prothorax as in the last section.*

Sp. 6. *Atomaria nigriventris.*

Atomaria nigriventris (*testibus t. t.*), Steph., Ill. Brit. Ent. iii. p. 69 (1830).

——— *nigrirostris* (p.) *et linearis* (p.), Steph., Ill. Brit. Ent. iii. p. 69 (1830).

——— *nana*, Erich., Nat. der Ins. Deuts. iii. p. 379 (1848).

The rather deeply punctured surface and subcylindrical body of this species, which has the thorax slightly narrower than is the case in the preceding one (as also less distinctly margined, with no indications of a central transverse impression behind, and usually darker), will serve to separate it from its allies. It appears to be rather common in the neighbourhood of London. Mr. Waterhouse has captured it in the Hammersmith marshes, at Highgate, Hampstead, Greenhithe and Erith; Mr. Douglas at Darenth wood; and I have taken it at Box Hill and Southend. In more distant spots I have no evidence of its being so abundant: I have, however, met with it at Spridlington, near Lincoln; Mr. Waterhouse has found it at Gosport; Messrs. Murray and Morris Young, in Scotland; and Mr. Haliday states that it occurs in Ireland. I have a specimen, taken at Cassel, which was examined by Erichson himself: it agrees precisely with the British ones.

As already stated, under species 4, the *A. nigriventris* of the Stephensian collection is coincident with the (subsequently established) *A. nana*, of Erichson,—which, in accordance with the law of priority, is consequently superseded. True it is that Mr. Stephens's cabinet contains, under the name of *nigriventris* (in addition to the five individuals of our present species), a single example of the *A. linearis*, and another of the *A. elongatula*: but that these are mere after-interpolations, and need not be taken into account, is proved by the fact that two, out of the five individuals above mentioned, have labels attached to them; and it is well known that Mr. Stephens was in the habit of appending to the *type*, from which his diagnosis was drawn out, some sort of a ticket;—

whilst the circumstance, that in the present instance there are actually *two* labelled specimens (one only being commonly indicated), renders this the more certain.*

Sp. 7. *Atomaria peltata.*

Atomaria peltata, Kraatz, Ent. Zeit. 95 (1853).

A rather large and well-marked species, and one which may be known by the darkness of its hue,—which fades off, on the elytra (especially towards the apex), into a more or less bright chestnut; by its medially dilated prothorax; and by its pale cinereous pubescence. Its limbs also are actually more variegated than is the case in the allied species,—the femora, the apical half of the tibiæ, and the extreme apex of the tarsi, being dark. In some respects it approaches the *A. elongatula;* but its rather shorter, more ovate, and convexer form, and more distinctly margined prothorax, will, in conjunction with the characters above enumerated, at once separate it therefrom. I possess five specimens of a pale infuscated-ferruginous hue; but I doubt if they are more than immature. It is one of the rarest of the British *Atomariæ:* I have, however, captured it at Spridlington and South Ferriby, in Lincolnshire; at Shenton, in Leicestershire; and in Professor Henslow's garden at Hitcham, in Suffolk. Mr. Janson, also, has taken it at Hampstead, near London; and Mr. Morris Young in the neighbourhood of Paisley. Like the *A. ferruginea* and *fimetarii*, it is unrepresented in the Stephensian cabinet.

* Considering that there are five examples of the *A. nana*, of Erichson, under each of the Stephensian species, *nigrirostris* and *nigriventris*, it may perhaps be asked whether the former has not as great a claim as the latter to be regarded as the exponent of it. To this, however, I would reply that it certainly has not; first, because the *nana* and *umbrina* are almost equally combined under the *nigrirostris*, whereas under the *nigriventris* the specimens are all referrible to *nana* except two (those two, moreover, being so distinct *inter se*, and from the *nana*, that they could not have been regarded by Mr. Stephens as identical with the rest); and, secondly, because there is no label attached to any one of the specimens under *nigrirostris* (thereby warranting that it may be considered as, *par excellence*, typical), whereas under the *nigriventris two* (and those veritable *nanas*) are ticketed. Conceding therefore (as I think we must necessarily do) that the continental *A. nana* is strictly synonymous with the Stephensian *nigriventris*, it follows that the *nigrirostris* of Stephens should be identified with the *A. umbrina:* and it is further evident, moreover, that, as the latter name is prior to the Stephensian one, the title of *nigrirostris* must be altogether suppressed.

Sp. 8. *Atomaria fuscipes.*

Crytophagus fuscipes, Gyll., Ins. Suec. i. p. 182 (1808).
Atomaria fuscipes et carbonaria (p.), Steph., Ill. Brit. Ent. iii. p. 68 (1830).
——— ——— Erich., Nat. der Ins. Deuts. iii. p. 388 (1848).

The totally black hue of this little species (even the limbs being as dark, almost, as the body) renders it unnecessary for me to call attention to any of its other diagnostic characters. It is exceedingly abundant in many of the sub-northern counties, especially towards the coast; but it appears to be rarer near London: Mr. Waterhouse has, however, taken it sparingly at Highgate. I have brushed it in immense profusion from off the grass at the edges of the cliffs at Bridlington and Flamborough, in Yorkshire; and I have also captured it at Fleetwood, in Lancashire; at Spridlington, South Ferriby, and Scawby, in Lincolnshire; at Whittlesea Mere, Hunts; at Cransley, in Northamptonshire; at Southend, in Essex; at Linton, in North Devon; at Treneglos, in Cornwall; in Lundy Island; the Isle of Wight; and at Holyhead, in North Wales. Mr. Morris Young, also, has captured it in Scotland; and Mr. Haliday records its occurrence in Ireland. It is remarkable that there are but two examples of it in the Stephensian cabinet,—one of which is rightly identified, and placed (alone) under *fuscipes;* whilst the other (which appears to be a rather large specimen, and immature) forms the *type* of Mr. Stephens's *A. carbonaria.*

Sp. 9. *Atomaria pusilla.*

Dermestes pusillus, Payk., Fna Suec. i. p. 295 (1798).
Silpha phœogaster et evanescens, Mshm, Ent. Brit. i. pp. 125, 126 (1802).
Atomaria fulvicollis, thoracica, evanescens, phœogaster, basella (p.) *et castanea* (p.), Steph., Ill. Brit. Ent. iii. pp. 64, 65, 66 (1830).
——— *pusilla*, Erich., Nat. der Ins. Deuts. iii. p. 397 (1848).

The very minute size, and oblong, subdepressed form of this species will at once distinguish it from the remainder of the *Atomaria.* In colour it is extremely variable, (which may account, indeed, for the number of, so called, "species" into which it has been separated); nevertheless, the more or less rufo-ferruginous hue of its (laterally rounded) prothorax, and of the hinder region of its elytra, is generally traceable. It is tolerably

abundant, and evenly distributed, throughout England. I have taken it at Spridlington, near Lincoln; at Cransley, in Northamptonshire; at Basset Down, in Wilts; at Farmington, in Gloucestershire; at Fowey and Penheale, in Cornwall; at Llangefni and Holyhead, in Anglesey; in the grounds of Trinity College, Dublin; and at Rosnalee, in the County of Cork. It has also been captured by Mr. Janson, at Hampstead; by Mr. Waterhouse, at Weybridge; and by Mr. Morris Young, and Mr. Murray, in Scotland. In the Stephensian cabinet, the *A. fulvicollis*, *thoracica*, *evanescens*, *phæogaster* and *basella* (except one specimen of the last, which belongs to the *atricapilla*) are referrible to the *Dermestes pusillus* of Paykull. There is also one example mixed up with the *A. castanea;* but this is merely, I imagine, the result of accident.

Sp. 10. *Atomaria atricapilla.*

Atomaria atricapilla (Kby), Steph., Ill. Brit. Ent. iii. p. 66 (1830).
——— *basella* (p.), Steph., Ill. Brit. Ent. iii. p. 65 (1830).
——— *nigriceps* (Maerk.), Erich., Nat. der Ins. Deuts. iii. p. 396 (1848).
——— *rufa*, *atricapilla et nigriceps*, Murray, Cat. Col. Scot. p. 41 (1853).

The oblong form and testaceous hue of this common species—its head, abdomen and scutellary region being alone darker (and often very obscurely so) than the remainder of the surface—will sufficiently characterize it. I have taken it in profusion at Bridlington, in Yorkshire; at Mablethorpe, Spridlington, and South Ferriby, in Lincolnshire; at Wittlesea Mere; at Cransley, in Northamptonshire; at Cromer, in Norfolk; at Hitcham, in Suffolk; at Southend, in Essex; at Bletchingley, in Surrey; at Chepstow, in Monmouthshire; at Withington and Farmington, in Gloucestershire; at Linton and Mount Edgcumbe, in Devon; at Fowey, in Cornwall; in Lundy Island; the Isle of Wight; at Holyhead, in North Wales; and near Kanturk, in Ireland. It has also been captured by Mr. Waterhouse in the neighbourhood of London (namely, at the Crystal Palace, Sydenham; Greenhithe and Erith), by Mr. Murray and Mr. Morris Young, in Scotland. The title of *nigriceps*, by which this insect is known on the Continent, has, in accordance with the law of priority, to give way to that of *atricapilla*,—a species sufficiently well defined by Mr. Stephens in his "Illustrations," and unmixed with any other even in his collection.

Sp. 11. *Atomaria Berolinensis.*

Atomaria Berolinensis, Kraatz, Ent. Zeit. p. 94 (1853).
——— *castanea* (p.), Steph., Ill. Brit. Ent. iii. p. 66 (1830).

A species which may be known by its oblong, subcylindrical body, broad head, deeply punctured, pubescent surface, and by its subventricose elytra and prothorax,—the line of separation between the two being, consequently, somewhat depressed. In its normal state it is rufo-testaceous, with its head, prothorax, scutellary region, and the outer margin of its elytra (especially towards the shoulders), more or less dusky, or obscured: but when immature it is wholly testaceous,—under which circumstances it might almost be mistaken, at first sight, for the *A. atricapilla*. Its more strongly sculptured surface, however, longer limbs, and more ventricose prothorax and elytra (the former of which is squarer and more largely developed, and is especially convex upon its hinder disk), will serve to distinguish it readily from that common insect. It appears to be somewhat scarce; I have, however, captured it at Danes Dyke (near Flamborough), in Yorkshire; at Lea, South Ferriby, and Scawby, in Lincolnshire; at Cransley, in Northamptonshire; at Withington, in Gloucestershire; and at Tintern, in Monmouth. It has been also taken by Mr. Waterhouse at Gosport, Northampton, and Reigate; and by Mr. Morris Young, in Scotland. There is but a single specimen of it in the Stephensian cabinet,—mixed up (probably through an oversight) with the *A. castanea*.

Sp. 12. *Atomaria fuscata.*

Cryptophagus fuscatus, Schön. Syn. Ins. ii. p. 100 (1808).
Atomaria castanea (p.), *testacea* (p.), *et rufipes* (p.), Steph. Ill. Brit. Ent. iii. pp. 66, 68 (1830).
——— *fuscata*, Erich. Nat. der Ins. Deuts. iii. p. 394 (1848).

Dark examples of this species are not always easily separable, at first sight, from the *A. atra*. It is, however, rather larger, on the average, than that insect, somewhat less deeply punctured, and with its prothorax narrower and much less convex,—the extreme hinder margin, moreover, being more distinctly sinuated, and elevated in the centre. In its normal state, it may be easily recognized by its dull surface and clouded-castaneous hue,—its tendency being to be more or less infuscated about its anterior region, and to become gradually paler as we approach its posterior one. Its legs, also, are rather longer, and more dusky, than is the

case in the allied species. It is a local insect. I have, nevertheless, taken it in considerable abundance at Whittlesea Mere, as also (though less plentifully) at Paxton, in Huntingdonshire; at Spridlington, South Ferriby and Scawby, in Lincolnshire; at Bridlington and Danes Dyke, in Yorkshire; at Cransley, in Northamptonshire; at Southend, in Essex; at Withington, in Gloucestershire; at Llangefni, in Anglesey; and at Killarney, in Ireland. It has also been captured by Mr. Douglas at Shirley, near Croydon; by Mr. Waterhouse at Weybridge and Greenhithe; and by Mr. Murray, and Mr. Morris Young, in Scotland. It constitutes the type of the *A. castanea*, Steph.,—a species, however, which has (in the collection) a specimen of the *A. Berolinensis* and *pusilla* mixed up with it. It also forms a portion of the *A. testacea*, Steph. (the type of which species is an immature *analis*), and the type of the *A. rufipes*, Steph.: it is fortunate, therefore, amidst so much confusion, that the title of *fuscata* has the priority over *any* Stephensian one.

Sp. 13. *Atomaria gutta*.

Atomaria gutta, Steph., Ill. Brit. Ent. v. p. 407 (nec coll.) (1832).
——— ——— Newm., Ent. Mag. ii. p. 201 (1834).
——— ——— Erich., Nat. der Ins. Deuts. iii. p. 387 (1848).

The pale, transverse (though sometimes ill-defined) central fascia with which the elytra of this species are adorned, in conjunction with its oval form and exceedingly convex prothorax, will serve to separate it from the remainder of the British *Atomariæ*. Occasionally the apex, also, of the elytra, as well as the dorsal fascia, is testaceous; and I have one example in which the two are confluent: in English specimens, however, the medial dash is usually alone pale. It is, apparently, extremely rare. I have taken it at Whittlesea Mere, in Huntingdonshire; and Mr. Waterhouse has met with it at Reigate.

Although Mr. Stephens's description applies, without doubt, to this conspicuously marked insect, it is to be observed that the *specimens*, in his cabinet, are not referrible to the *A. gutta*, but to the *A. apicalis*.

Sp. 14. *Atomaria atra*.

Kateretes ater, Hbst, Käf. v. p. 15, Tab. 41, fig. 5 (1793).
Atomaria atra, Erich., Nat. der Ins. Deuts. iii. p. 392 (1848).

The oblong-ovate form, and rather strongly punctured surface, of the *A. atra*, in conjunction with its dark hue (the apex of the elytra being alone obscurely fuscescent) and very convex pro-

thorax,—the extreme hinder margin of which, like that of the *A. mesomelas*, is not raised in the centre,—must serve to distinguish it from its allies. It would appear to be one of the rarest of the British species,—the only specimen which I have seen, except my own (out of the 1,137 which I have examined), being in the possession of Mr. Waterhouse, by whom it was found in the Hammersmith marshes during January of 1856. The examples in my own cabinet I captured at Withington, in Gloucestershire, and at Slapton Ley, in the south of Devon. Mr. Haliday, however, informs me that it has been met with in Ireland.

In the Stephensian collection the present species does not exist, Mr. Stephens's *A. atra* being composed of five specimens of the *A. analis* (which was his *type*), and one of the *versicolor*.

Sp. 15. *Atomaria mesomelas.*

Dermestes mesomelas, Hbst, Käf. iv. p. 143, Tab. 41, fig. 7 (1792).
Corticaria dimidiata. Mshm, Ent. Brit. i. p. 112 (1802).
Atomaria mesomelas et dimidiata (p.), Steph., Ill. Brit. Ent. iii. p. 67 (1830).
——— ——— Erich., Nat. der Ins. Deuts. iii. p. 386 (1848).

A beautiful and distinct little *Atomaria*, readily known by its oblong-ovate form, dark shining surface, and by the bright testaceous hue of its limbs and apical half of its elytra,—the junction between the light and dark portions being usually exceedingly abrupt. Its prothorax is occasionally rufescent; but in normal specimens it is as dark as the basal region of its elytra. It frequents marshy and damp places, and is somewhat local. I have taken it in the Cambridgeshire fens, and at Whittlesea Mere, in Huntingdonshire; at Withington, in Gloucestershire; at Slapton Ley, in the south of Devon; and at Tenby, in South Wales. Mr. Waterhouse has captured it in the Hammersmith marshes, at Reigate, and Gravesend; and Mr. Haliday records it as occurring in Ireland.

It is an insect so conspicuous and well-marked, that the Stephensian specimens standing under *mesomelas* are unadulterated with any other species. It forms, however, only a portion (though the typical one) of Mr. Stephens's *A. dimidiata*,—under which name there are two examples of *mesomelas* (one of which is the Marshamian *Corticaria dimidiata*), three of *analis*, and one of *apicalis*.

Sp. 16. *Atomaria basalis.*

Atomaria basalis, Erich., Nat. der Ins. Deuts. iii. p. 391 (1848).

The rather broad, oblong-ovate form, and thickly punctured, pubescent surface, of the *A. basalis*, in conjunction with the peculiarity of its colouring,—which is of a dull black, the apical two-thirds of its elytra being rufo-testaceous (with the line of demarcation between the light and dark portions ill-defined),—will at once distinguish it from its allies. Occasionally *more* than two-thirds of the elytra are testaceous, leaving only their extreme base suffused with a darker tint. I possess a series of this insect taken by myself about twelve years ago; but whether at Cambridge, or on the Cotswold Hills of Gloucestershire, I cannot at present (having failed to make a note at the time) recal. I have seen specimens, however, which were captured by Mr. Murray, near Edinburgh. It is unrepresented in the Stephensian collection.

Sp. 17. *Atomaria munda.*

Atomaria munda, Erich., Nat. der Ins. Deuts. iii. p. 388 (1848).

Well distinguished by its oblong-ovate form, finely punctulated surface, by its more or less rufescent, or piceo-rufescent, hue, and by the deep central transverse impression at the base of its prothorax,—the impression being at either extremity terminated by a short raised costa, or ridge. It is exceedingly rare; and, like the last, unrepresented in Mr. Stephens's cabinet. I have not, myself, ever met with it, but possess a specimen from the north of England; and I have seen others, in the collection of Mr. Waterhouse, which he captured at Southgate, near London.

S. III.—*Body more or less ovate; prothorax usually somewhat produced behind (in front of the scutellum), and less distinctly margined along its posterior edge.*

Sp. 18. *Atomaria nigripennis.*

Dermestes nigripennis, Payk., Fna Suec. i. p. 292 (1798).
Atomaria nigripennis, Steph., Ill. Brit. Ent. iii. p. 67 (1830).
Erich., Nat. der Ins. Deuts. iii. p. 390 (1848).

Immediately known by its convex, ovate form, bright, subglabrous, lightly punctured surface, and by its rufous head and prothorax,—the latter of which is broadly margined towards its posterior angles, and with a deep transverse impression behind, the impression however having scarcely any indication (even beneath

the microscope) of being terminated at either extremity by a raised costa. It is one of the rarer species, at any rate towards the south: my specimens are from the north of England; and it is recorded in Mr. Murray's catalogue to occur in the Dalmeny woods, near Edinburgh.

Sp. 19. *Atomaria Hislopi*, n. sp.

A. Oblongo-ovalis, antice et postice subacuminata, nigra, nitidissima, subglabra, parce subtiliterque punctata; prothorace amplo, valde convexo, postice latiusculo immarginato et foveâ mediâ transversâ profundâ impresso, ad latera subtilissime marginato atque vix rotundato; elytris minus distincte et parcius punctulatis, concoloribus; antennis pedibusque ferrugineis.

Long. corp. lin. 1.

A. Oblong-ovate, exceedingly shining, convex, nearly glabrous (being very sparingly beset with a short, decumbent, and cinereous pubescence), and black. *Prothorax* large, slightly dilated in the middle (though, nevertheless, wide posteriorly), exceedingly convex, and with a deep (though somewhat short) transverse central fovea behind; perfectly immarginate along its posterior edge (which is subsinuated,—that portion moreover which is immediately behind the fovea being a good deal raised), though very delicately margined at its sides,—which are but very slightly rounded. *Elytra* convex, and rather more finely and sparingly punctured than the prothorax; broadest about the middle (being narrowed and rounded off at the shoulders), and rather attenuated posteriorly; immaculate. *Antennæ* and *legs* ferruginous; with the *femora* of the latter infuscated towards their base.

A large, robust, and well-marked *Atomaria*, somewhat resembling, at first sight, the *A. turgida* of Erichson. It is, however, abundantly distinct, specifically, from that insect; from which it may be at once known, not only by its superior bulk and more acuminated outline (both before and behind), but likewise by its uniformly black, brighter, subglabrous and less punctured surface, and by its more ample prothorax,—which is immarginate (though deeply impressed in the centre) behind. In its general habit it has more in common, I think, with the *A. nigripennis* than with any other of our British species; nevertheless its much larger bulk, and the sinuated hinder margin of its prothorax, would remove it into the vicinity of the *A. analis* and *turgida*. In its posteriorly immarginate prothorax it recedes from most of the *Atomariæ* with which I am acquainted.

There is an old example of it in the Stephensian cabinet,—unnamed, and without any reference to the locality from whence it came. It has, however, been lately re-discovered by Mr. Hislop in Scotland, who found it beneath the dung of grouse (though this, I imagine, was a merely accidental circumstance,—the *Atomariæ* being accustomed to harbour under such like *rejectamenta*, indiscriminately) in Perthshire. I have seen a specimen of it in the collection of Mr. Janson, and another in that of Mr. Murray of Edinburgh,—both of which however were obtained from Mr. Hislop, who would appear therefore to have been (latterly at least) its sole captor, and to whom I have dedicated the species.

Sp. 20. *Atomaria apicalis.*

Atomaria dimidiata (p.), *carbonaria* (p.), *gutta* (sec. coll., nec descr.), *rufipes* (p.), *et dorsalis* (p.), Steph., Ill. Brit. Ent. iii. p. 67—69 (1830).

——— *apicalis*, Erich., Nat. der Ins. Deuts. iii. p. 395 (1848).

An *Atomaria*, which is exceedingly variable in size, but which may be at once distinguished by its ovate form (it being much acuminated both before and behind), piceous hue, and by its strongly punctured, pubescent surface. Its prothorax, from being so much narrowed anteriorly, has its sides scarcely at all rounded. It appears to be more common within the London district than elsewhere: I have seen a large series of it taken by Mr. Waterhouse at Weybridge, Hampstead, and at the Crystal Palace, at Sydenham; and it has been captured by Mr. Janson, at Hampstead and Finchley. The only spot in which I have myself observed it is at Avebury (on the Marlborough Downs) in Wiltshire.

It will be perceived, on reference to the synonymes cited above, that it forms a portion of five of the species in the Stephensian cabinet: as, however, it does not appear to have been the *type* of any of them (as is proved by the labels attached to the examined specimens), none of those titles can in any way interfere with that which was applied to it by Erichson in 1848.

Sp. 21. *Atomaria analis.*

Cryptophagus analis, Schüpp., in litt.

Atomaria testacea (p.), *dimidiata* (p.), *atra* (p.), *et dorsalis* (p.), Steph., Ill. Brit. Ent. iii. p. 66—69 (1830).

——— *analis*, Erich., Nat. der Ins. Deuts., iii. p. 398 (1848).

The present species and the following one are rather allied, in general aspect, to the *A. apicalis*. They may both of them, how-

ever, be distinguished from that insect by their more lightly punctured elytra, and by their being less acuminated both before and behind,—their prothoraces moreover (which are slightly bisinuated along their posterior margin) being more rounded at the sides than is there the case. From the *A. ruficornis* the *analis* may be known by its somewhat larger bulk, more oblong form, more perceptibly punctured elytra, and by its prothorax being altogether broader, and less narrowed posteriorly, than in that species. It would seem to be a rather scarce insect in the south; it has, however, been taken by Mr. Douglas near Croydon. Specimens have been forwarded to me from Paisley by Mr. Morris Young, and from Edinburgh by Mr. Murray: and (in addition to my own series, which was collected, some years ago, whilst at Cambridge) I have myself met with it at Rosnalee, near Kanturk, in the south of Ireland.

When immature it forms the type of the *A. testacea*, and when mature of the *A. atra*, of Mr. Stephens. The latter of these names, however, belongs in reality to a totally different insect, and the former (which is represented in the Stephensian cabinet by two specimens of *fuscata*, and one, imperfectly developed, of the species under consideration) is inapplicable to the present *Atomaria*, which is generally (with the exception of the shoulders and posterior region) of a deep black: hence neither of them will clash with the title proposed for it by Schüppel, and subsequently adopted by Erichson. As for the Stephensian names of *dimidiata* and *dorsalis* (under each of which there are, in the collection, examples of the *analis*), they, fortunately, do not concern us here, since the *typical* specimen of neither of them is referrible to our present insect.

Sp. 22. *Atomaria ruficornis.*

Silpha ruficornis, Mshm, Ent. Brit. i. p. 125 (1802).

Atomaria ruficornis, carbonaria (p.), *et dorsalis* (p.), Steph., Ill. Brit. Ent. iii. p. 67—69 (1830).

Cryptophagus terminatus (Dahl.), Comolli, Col. Nov. ac Rar. Prov. Novocom. p. 20 (1837).

Atomaria terminata, Erich., Nat. der Ins. Deuts., iii. p. 399 (1848).

The slightly smaller size, and more ovate outline, of this species, in conjunction with its less distinctly punctured elytra (which are much rounded off at the shoulders), shorter and more robust antennæ, and the structure of its prothorax (which is constricted behind, and somewhat more posteriorly produced, in front of the scutellum, than is the case in that insect), will readily separate it

from the *A. analis*. It is pretty generally distributed throughout the country: I have taken it at Bridlington, in Yorkshire; at Spridlington and Cainby, in Lincolnshire; at Whittlesea Mere, in Huntingdonshire; at Cransley, in Northamptonshire; at Plumpstead, in Kent; at Basset Down, in Wilts; at Withington, in Gloucestershire; at Weston-super-Mare, in Somerset; and at Chepstow, in Monmouth. It has also been captured by Mr. Waterhouse near Brighton, at Gosport, and near London; by Mr. Douglas, at Darenth Wood and Lee, in Kent; and by Mr. Murray and Mr. Morris Young, in Scotland.

It is the *A. terminata* of the Continent; but, as that name was not published until 1837, and our present insect is the undoubted *Silpha ruficornis* of the "Entomologia Britannica" (as is proved by the existence of the original example, with a label attached to it, in the Stephensian cabinet), it is evident that the Marshamian title has the priority, and must therefore be adopted.

The *type* of the *A. dorsalis* of Stephens (though mixed up, in his collection, with an example of the *apicalis*, and another of the *analis*) is, likewise, the continental *A. terminata:* hence, both of these names (*dorsalis* and *terminata*) must be suppressed in favour of the Marshamian one of *ruficornis*.

Sp. 23. *Atomaria versicolor.*

Atomaria atra (p.), Steph., Ill. Brit. Ent. iii. p. 67 (1830).
——— *versicolor*, Erich., Nat. der Ins. Deuts. iii. p. 399 (1848).
——— *turgida*, Murray (nec Erich.), Cat. Col. Scot. p. 42 (1853).

In its distinctly punctured surface, the *A. versicolor* approaches the *apicalis*. It is, however, on the average, somewhat larger, and much less ovate, than that insect; it is also brighter, and less pubescent, and its prothorax is more rounded at the sides. In the peculiarity of its colouring moreover, which is of a rich rufo-piceous tint, with the shoulders and apical region of the elytra more or less clearly rufescent, it recedes from most of its allies. It is one of the scarcer species; and it is remarkable that, out of the 1,137 British specimens of the genus which I have examined, there are, with the exception of my own series, but four examples of the *A. versicolor:* one of these is in the Stephensian cabinet (where it is mixed up with five individuals of the *analis*, which are made to represent the *A. atra*), and the other three were taken by Mr. Morris Young in Renfrewshire,—being the actual examples registered by Mr. Murray as the *A. turgida* (which, however, is a totally different insect), in his catalogue of the Coleoptera of Scotland. I have myself met with it in considerable abundance at Withington, on the Cotswold Hills of Gloucestershire (prin-

cipally beneath the dry dung of sheep); as also (though less commonly) at South Ferriby and Spridlington, in Lincolnshire; at Shenton, in Leicestershire; at Tintern, in Monmouth; and in the Rev. H. A. Simcoe's woods, at Penheale (near Launceston), in Cornwall.

Such are the general statistics (so far as I have been able to ascertain them) of our native *Atomariæ*. The following catalogue will show, at a glance, the manner in which the various species should be cited, with reference to the synonymy of British and continental naturalists; and I need merely remark, that the *types* of the Stephensian collection (always plainly indicated) are regarded as the sole exponents of the Stephensian species,—no allusion being required, in such a list, to those numerous instances of the admixture, everywhere, of non-typical specimens, all of which have been fully discussed in the preceding memoir.

1. ferruginea, Sahl.
   pallida, Woll.
2. fimetarii, Hbst
3. linearis, Steph.
4. elongatula, Erich.
5. umbrina, Gyll.
   nigrirostris, Steph.
6. nigriventris (Kby), Steph.
   nana, Erich.
7. peltata, Kraatz
8. fuscipes, Gyll.
   carbonaria, Steph.
9. pusilla, Pk.
   fulvicollis, Steph.
   thoracica, Steph.
   evanescens, Mshm, Steph.
   phæogaster, Mshm, Steph.
   basella, Steph.
10. atricapilla (Kby), Steph.
    nigriceps, Erich.
11. Berolinensis, Kraatz
12. fuscata, Schön.
    castanea, Steph.
    rufipes, Steph.
13. gutta (Newm.), Steph.
14. atra, Hbst

15. mesomelas, Hbst
    dimidiata, (Mshm), Steph.
16. basalis, Erich.
17. munda, Erich.
18. nigripennis, Pk.
19. Hislopi, Woll.
20. apicalis, Erich.
21. analis (Schüp.), Erich.
    testacea, Steph.
    atra, Steph.
22. ruficornis, (Mshm), Steph.
    terminata, Com.
    dorsalis, Steph.
23. versicolor, Erich.

IX. *On the Recent Progress of* Micro-Lepidopterology *on the Continent.* *By* H. T. Stainton, Esq.

[Read July 7th, 1856.]

Twenty-four years have now elapsed since the publication of Treitschke's first volume on the *Tineæ*. This was the first general descriptive work treating of that group of *Lepidoptera* that had appeared *on the Continent* since the time of Fabricius. It was a work which at once rendered the figures of Hübner far more generally serviceable, for the frequently misnamed figures of Hübner were here referred to their correct names, and their histories and habits were given. Sometimes histories were applied to the wrong species, and many species were handled in a manner to create confusion. But whatever may be the faults of Treitschke's work, it was a vast step, and it contributed very materially to the production of Stephens's fourth volume of his "Illustrations," which appeared in 1834 and 1835.

When a general work on a group of insects has appeared, each Entomologist seeks there for the name of any species he may chance to meet with; and if he happens to find it there, well and good, but if not he probably describes it in some scientific journal or in the transactions of some learned society: but were the general work non-existent, he would feel utterly disheartened at the